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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,324	10/16/2003	Robert Urscheler	62733C	7328

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THE DOW CHEMICAL COMPANY  
INTELLECTUAL PROPERTY SECTION  
P. O. BOX 1967  
MIDLAND, MI 48641-1967

EXAMINER
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BAREFORD, KATHERINE A

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/687,324

Applicant(s)

URSCHELER ET AL.

Examiner

Katherine A. Bareford

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 32 and 33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27, 29-31, 34, 35 and 37-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

*Claims 28 and 36 are canceled*

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/05</u> | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The amendment and declaration of Dec. 13, 2005 have been received and entered. It is noted that claims 28 and 36 are canceled.

#### ***Priority***

1. Priority in the present application as to the use of EP 1249533 only extends back to 10/17/02, the filing date of 10/273,922. A review of 10/257,172 indicates that it does not teach all the features in the independent claims of the present application, and thus, priority fails.

#### ***Response to Amendment***

2. The declaration filed on July 25, 2005 under 37 CFR 1.131 combined with the declaration of Joyce E. Clark of Dec. 13, 2005 and the arguments by applicant in the Remarks section of the Dec. 13, 2005 amendment is sufficient to overcome the EP 1 249 533 (hereinafter '533) reference.

As to the Examiner's position after filing of the July 25, 2005 declaration under 37 CFR 1.131 that (1) applicant had not indicated that the reduction to practice occurred in this country, a NAFTA member country, or a WTO member country--the Examiner notes applicant's Dec. 13, 2005 arguments, and accepts that, at the least, the filing at the US receiving office would be a filing in a WTO member country, and thus a reduction to practice in a WTO member country. (2) Furthermore, as to applicant's reference to WO

2004/035929 A1, which published in April 29, 2004, as showing reduction to practice because the WO application was filed on October 15, 2002, prior to the '533 publication, and the Examiner's position that the WO publication shows what the application was like at the time of the April 29, 2004 publication, not necessarily what the application looked like at the time of filing, since WO applications can be amended and applicant does not indicate in the declaration that this WO document as published is identical to what was filed on October 15, 2002 - the Examiner has reviewed and accepted Joyce E. Clark's declaration of Dec. 13, 2005 that she has compared the application of the WO document at the time of filing and finds that it is the same as the publication of the WO application.

As a result, '533 is no longer a valid reference for the previously provided 35 USC 103 rejections using that reference.

3. The statement provided by applicant's attorney of record, Paul Hayhurst, that the present application and the application published as WO 02/084029 A1 were, at the time the invention of the present application was made, subject to an obligation of assignment to the same person in the Remarks of Dec. 13, 2005, removes '029 as a valid reference for the previously provided 35 USC 103 rejections using that reference.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-6, 8-27, 29-31, 34, 35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/54828 (hereinafter '828) in view of Wittosch et al (US 6548120) and WO 92/11095 (hereinafter '095).

Claims 1, 35, 41: '828 teaches a method of producing a coated substrate. Figure 2 and page 8. The steps include forming a composite, multilayer free flowing curtain. Figure 2 and page 8. The curtain comprises at least two layers. Page 2. At least one or more layer can provide barrier properties. Page 2. One layer can be provided with a material that provides water resistance functionality. Page 2. A layer can also provide oxygen barrier functionality. Page 2. The curtain is contacted with a continuous moving web. Figure 2 and page 8.

Claim 2: the method can be used to make packages such as food and drink packages. Page 7.

Claim 6: the oxygen transmission can be no more than  $150 \text{ cm}^3/\text{m}^2$ , per 24 h (23 degrees C, 83% relative humidity) at one atm, and most preferably no more than  $1 \text{ cm}^3/\text{m}^2$ . pages 6-7.

Claim 8: it is desired to prevent cracks. Pages 4-5.

Claims 14-17: 5-8 layers can be applied. Page 8.

Claim 20: the barrier layer can include polyvinyl alcohol. Page 2.

Claim 22: the layers can include a surfactant. Page 4.

Claim 26: the web can be base paper. Page 4.

Claim 34: additional adhesive layer can be applied. Page 2.

Claim 37: the curtain can be formed with a slide die. Figure 2 and page 8.

'828 teaches all the features of these claims except for (1) the combination of different layer materials, (2) the Cobb value features (claims 1, 5), (3) the oil/grease features (claims 1, 3), (4) the water vapor transmission (claims 1, 4), (5) the oxygen barrier features (claims 1, 6), (6) the coat weight (claims 9-13), (7) the pigments and printability (claims 2, 18-19), (8) the components of claim 21, (9) the solid contents (claims 23-25), (10) the paper features (claim 27), (11) the web speed (claims 1 and 29-30), (12) the web weight (claim 31).

However, Wittosch teaches layer materials desired to be applied as part of a multilayer coating to paper webs. The basis weight of the substrate paper can be 20 to

150 lbs/ft<sup>2</sup> (30-244 g/m<sup>2</sup>). Column 6, lines 40-50. The substrate can be uncoated paper and paperboard. Column 6, lines 40-45. Wittosch teaches that it is desired to provide grease resistant layers. Column 7, lines 30-35 and column 10, line 15 through column 11, line 35. The grease Kit value can be 11-12. column 11, lines 15-25 and column 7, lines 60-68. It is also desirable to provide water vapor barrier functionality and water resistance functionality. Column 7, lines 30-60. The water vapor transmission rate can be less than 2.38 g/100 sq.inches in a day (about 37 g/m<sup>2</sup>). Column 9, lines 10-20. The Cobb test for water resistance can be 0.99-.58 g/100 sq.inches in 30 min (about 15-9 g/m<sup>2</sup>). Column 11, lines 15-25. The layers can include polyvinyl chloride. Column 5, lines 20-30.

'095 teaches curtain coating processes. Page 1, lines 1-5. '095 teaches that for economic reasons, high coating speeds are desirable provided they can be achieved with low waste and without loss of product quality. Page 1, lines 20-30. '095 teaches that high coating speeds are possible by using a low viscosity bottom layer. Page 1, lines 35-35. The curtain coating can be multilayer curtain coating. page 6, line 30 through page 7, line 10 and figures 1 and 4. Uniform coatings can be achieved with speeds up to 738 m/min (mmin<sup>-1</sup>). Page 11, lines 5-25.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '828 to further include functional layers that provide grease and/or water vapor barrier functionality and other paper features as described by Wittosch in order to provide a desirable final paper for commercial use, because '828

teaches to include one or more layers that have functional barrier properties, including moisture resistance and oxygen barrier functionality and Wittosch teaches that it is desirable to provide layers that provide grease resistance and water vapor functionality when providing commercial paper. It would further have been obvious to provide the different functional features in separate layers, given '828's teaching that multiple functional layers can be provided. As to the specific water vapor transmission amounts, oxygen transmission, the Cobb values, and the Kit values, '828 and Wittosch teach that these are important values to control in the area of that claimed by applicant, and one of ordinary skill in the art would perform routine experimentation to optimize the specific values of these desirable features. As to the use of pigments and a printable layer, it is the Examiner's position that it would have been obvious to use well known pigments in the layers and to make printable, given that '828 teaches, for example, that food and drink packages can be made, which packages are well known to be printed and provided with color for consumer use. As to the coatweight and solid contents, it would have been obvious to perform routine experimentation to optimize these features based on the functional features desired, given the teaching of '828 to provide multiple extremely thin layers and the number of functional layer features that are taught to be possibly provided. As to the components of claim 21, Wittosch teaches that polyvinyl chloride, for example, is a desirable ingredient in the coating layers. As to the use of non-precoated papers, Wittosch teaches the desire to coat and protect such papers. As to the web weight, Wittosch teaches the desire to coat and protect papers of



such weight. It further would have been obvious to modify '828 in view of Wittosch to further use as high a web velocity (coating speed) as possible, including up to 738 m/min, as suggested by '095 with an expectation of providing a desirably economically efficient coating, because '828 in view of Wittosch teaches the desire to curtain coat moving webs and '828 notes that a bottom low viscosity layer can be provided (page 4, lines 5-15) and '095 teaches that when curtain coating it is desirable to increase the coating speed to as high as possible, including to 738 m/min, for economic reasons by a process that uses a low viscosity bottom layer.

7. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over '828 in view of Wittosch and '095 as applied to claims 1-6, 8-27, 29-31, 34, 35 and 37 above, and further in view of the abstract of DD 221722 (hereinafter '722).

'828 in view of Wittosch and '095 teaches all the features of this claim except use of synthetic magadiite as a pigment.

However, '722 teaches a desirable method of synthesizing magadiite, thus forming synthetic magadiite. Abstract. The produced material can be used as pigment. Abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '828 in view of Wittosch and '095 to use a pigment of synthetic magadiite as described by '722 in order to provide a desirable final paper for commercial use, because '828 in view of Wittosch and '095 teaches to include one or

more layers that have functional barrier properties and to use a pigmented coating, and '722 teaches that a known pigment that can be synthesized is magadiite.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over '828 in view of Wittosch and '095 as applied to claims 1-6, 8-27, 29-31, 34, 35 and 37 above, and further in view of Hughes (US 3508947)

'828 in view of Wittosch and '095 teaches all the features of this claim except formation of a curtain with a slot die.

However, Hughes teaches that when curtain coating, it is well known to use a slide die (figure 1) or a slot type die (figure 8) to provide the free falling curtain. Column 8, lines 10-45.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '828 in view of Wittosch and '095 to use a slot die as described by Hughes in order to provide a desirable final paper for commercial use, because '828 in view of Wittosch and '095 teaches to use a slide curtain coating die system, and Hughes teaches that it is desirable to curtain coat with either a slot or slide die system.

9. Claims 38, 39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over '828 in view of Wittosch and '095 as applied to claims 1-6, 8-27, 29-31, 34, 35 and 37 above, and further in view of Dittman et al (US 4001024).

'828 in view of Wittosch and '095 teaches all the features of these claims except the provision of polyethylene oxide in a layer. '828 does teach the use of a surfactant in the coating layers. See page 8.

However, Dittman teaches that a well known surfactant to use when forming multilayer coating layers on slide die systems is polyethylene oxide. See column 7, lines 55-65.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '828 in view of Wittosch and '095 to further use a surfactant such as polyethylene oxide as described by Dittman in order to provide a desirable final paper for commercial use, because '828 in view of Wittosch and '095 teaches to include a surfactant in the layers, and Dittman teaches that a well known surfactant for multilayer coatings on slide dies is polyethylene oxide. As to the interface layer, '828 indicates that surfactants can be in the various layers.

### ***Response to Arguments***

10. Applicant's arguments with respect to claims 1-27, 29-31, 34-35 and 37-41 have been considered but are moot in view of the new ground(s) of rejection.

As to applicant's arguments as to the rejections relying on '828 in view of Wittosch, the Examiner notes that the new reference (WO 92/11095) has been provided as to the coating speed.

As to the combination of '828 and Wittosch, the Examiner notes that '828 is directed to a packaging laminate, which is a substrate bearing one or more coating layers (see page 1), where the layers have various functionalities (see page 2) and the substrate can be paper or paperboard (page 4) <sup>coated</sup> by a curtain coating process (page 3). Similarly Wittosch is directed to coated paper stocks that can be useful as packages coated with various functional layers (column 1, lines 10-25, column 7) and that the coatings can be applied by various methods including curtain coating (column 6, lines 55-60). The overlap in purpose and usage clearly shows the relation of the references.


### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
KATHERINE BAREFORD  
PRIMARY EXAMINER